[b] If no specific information is available, these values can be assumed to represent the most common condition of tanks currently in use.

TABLE 24 TO SUBPART G OF PART 63—TYPICAL NUMBER OF COLUMNS AS A FUNCTION OF TANK DIAMETER FOR INTERNAL FLOATING ROOF TANKS WITH COLUMN SUPPORTED FIXED ROOFS [A]

Tank diameter range (D in feet)	Typical number of columns, (N_C)
0 < D ≤ 85	1
85 < D ≤ 100	6
100 < D ≤ 120	7
120 < D ≤ 135	8
135 < D ≤ 150	9
150 < D ≤ 170	16
170 < D ≤ 190	19
190 < D ≤ 220	22
220 < D ≤ 235	31
235 < D ≤ 270	37
270 < D ≤ 275	43
275 < D ≤ 290	49
290 < D ≤ 330	61
330 < D ≤ 360	71
360 < D ≤ 400	81

[a] Data in this table should not supersede information on actual tanks.

TABLE 25 TO SUBPART G OF PART 63—EFFECTIVE COLUMN DIAMETER (F_c)

Column type	F_c (feet)
9-inch by 7-inch built-up columns	1.1
8-inch-diameter pipe columns	0.7
No construction details known	1.0

TABLE 26 TO SUBPART G OF PART 63—SEAL RELATED FACTORS FOR INTERNAL FLOATING ROOF VESSELS

Seal type	K_S	n
Liquid mounted resilient seal:		
Primary seal only	3.0	0
With rim-mounted secondary seal [a]	1.6	0
Vapor mounted resilient seal:		
Primary seal only	6.7	0
With rim-mounted secondary seal [a]	2.5	0

[a] If vessel-specific information is not available about the secondary seal, assume only a primary seal is present.

TABLE 27 TO SUBPART G OF PART 63—SUMMARY OF INTERNAL FLOATING DECK FITTING LOSS FACTORS (K_F) AND TYPICAL NUMBER OF FITTINGS (N_F)

Deck fitting type	Deck fitting loss factor (K_F) [a]	Typical number of fittings (N_F)
Access hatch		1.
Bolted cover, gasketed.	1.6	
Unbolted cover, gasketed.	11	
Unbolted cover, ungasketed.	[b] 25	
Automatic gauge float well.		1.
Bolted cover, gasketed.	5.1	
Unbolted cover, gasketed.	15	
Unbolted cover, ungasketed.	[b] 28	
Column well		(see Table 24).
Builtup column-sliding cover, gasketed.	33	
Builtup column-sliding cover, ungasketed.	[b] 47 10	
Pipe column-flexible fabric sleeve seal.	19	
Pipe column-sliding cover, gasketed.	32	
Pipe column-sliding cover, ungasketed.		
Ladder well		1.
Sliding cover, gasketed.	56	
Sliding cover, ungasketed.	[b] 76	
Roof leg or hanger well.		$(5+D/10+D^2/600)$ [c].
Adjustable	[b] 7.9	
Fixed	0	
Sample pipe or well		1.
Slotted pipe-sliding cover, gasketed.	44	
Slotted pipe-sliding cover, ungasketed.	57	
Sample well-slit fabric seal, 10 percent open area.	[b] 12	
Stub drain, 1-in diameter [d].	1.2	$(D^2/125)$ [c].
Vacuum breaker		1.
Weighted mechanical actuation, gasketed.	[b] 0.7	
Weighted mechanical actuation, ungasketed.	0.9	

[a] Units for K_F are pound-moles per year.

[b] If no specific information is available, this value can be assumed to represent the most common/typical deck fittings currently used.
[c] D=Tank diameter (feet).
[d] Not used on welded contact internal floating decks.

TABLE 28 TO SUBPART G OF PART 63—DECK SEAM LENGTH FACTORS [A] (S_D) FOR INTERNAL FLOATING ROOF TANKS

Deck construction	Typical deck seam length factor
Continuous sheet construction [b]:	
5-feet wide sheets	0.2 [c]
6-feet wide sheets	0.17
7-feet wide sheets	0.14
Panel construction [d]:	
5 × 7.5 feet rectangular	0.33
5 × 12 feet rectangular	0.28

[a] Deck seam loss applies to bolted decks only. Units for S^D are feet per square feet.
[b] S_D=1/W, where W = sheet width (feet).
[c] If no specific information is available, these factors can be assumed to represent the most common bolted decks currently in use.
[d] S_D=(L+W)/LW, where W = panel width (feet), and L = panel length (feet).

TABLE 29 TO SUBPART G OF PART 63—SEAL RELATED FACTORS FOR EXTERNAL FLOATING ROOF VESSELS

Seal type	Welded vessels		Riveted vessels	
	K_S	N	K_S	N
Metallic shoe seal:				
Primary seal only	1.2	1.5	1.3	1.5
With shoe-mounted secondary seal	0.8	1.2	1.4	1.2
With rim-mounted secondary seal	0.2	1.0	0.2	1.6
Liquid mounted resilient seal:				
Primary seal only	1.1	1.0	[a] NA	NA
With weather shield	0.8	0.9	NA	NA
With rim-mounted secondary seal	0.7	0.4	NA	NA
Vapor mounted resilient seal:				
Primary seal only	1.2	2.3	NA	NA
With weather shield	0.9	2.2	NA	NA
With rim-mounted secondary seal	0.2	2.6	NA	NA

[a] NA=Not applicable.

TABLE 30 TO SUBPART G OF PART 63—ROOF FITTING LOSS FACTORS, K_{Fa}, K_{Fb}, AND m, [A] AND TYPICAL NUMBER OF FITTINGS, N_T

Fitting type and construction details	Loss factors [b]			Typical number of fittings, N_T
	K_{Fa} (lb-mole/yr)	K_{Fb} (lb-mole/[mi/hr]^m-yr)	m (dimensionless)	
Access hatch (24-in-diameter well)				1.
Bolted cover, gasketed	0	0	[c] 0	
Unbolted cover, ungasketed	2.7	7.1	1.0	
Unbolted cover, gasketed	2.9	0.41	1.0	
Unslotted guide-pole well (8-in-diameter unslotted pole, 21-in-diameter well).				1.
Ungasketed sliding cover	0	67	[c] 0.98	
Gasketed sliding cover	0	3.0	1.4	
Slotted guide-pole/sample well (8-in-diameter unslotted pole, 21-in-diameter well).				([d]).
Ungasketed sliding cover, without float	0	310	1.2	
Ungasketed sliding cover, with float	0	29	2.0	
Gasketed sliding cover, without float	0	260	1.2	
Gasketed sliding cover, with float	0	8.5	1.4	
Gauge-float well (20-inch diameter)				1.
Unbolted cover, ungasketed	2.3	5.9	[c] 1.0	
Unbolted cover, gasketed	2.4	0.34	1.0	
Bolted cover, gasketed	0	0	0	
Gauge-hatch/sample well (8-inch diameter)				1.
Weighted mechanical actuation, gasketed.	0.95	0.14	[c] 1.0	
Weighted mechanical actuation, ungasketed.	0.91	2.4	1.0	
Vacuum breaker (10-in-diameter well)				N_{F6} (Table 31).
Weighted mechanical actuation, gasketed.	1.2	0.17	[c] 1.0	